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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,763	11/30/2001	Raffi Codilian	K35A0999	9233

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WESTERN DIGITAL CORP.  
20511 LAKE FOREST DRIVE  
C205 - INTELLECTUAL PROPERTY DEPARTMENT  
LAKE FOREST, CA 92630

EXAMINER

SLAVITT, MITCHELL R

ART UNIT PAPER NUMBER

2651

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/008,763

Applicant(s)

CODILIAN, RAFFI

Examiner

Mitchell R Slavitt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-26 is/are allowed.
- 6) ☒ Claim(s) 1-17 and 27-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson et al. (Carlson) in view of Kikuta et al. (Kikuta).

Regarding claim 1, Carlson teaches a rotatable disk, pivotable actuator, transducer, and a controller in Fig 1. Carlson does not teach a shock event logger. Kikuta teaches this feature at col 4, lines 54-63. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to improve upon the shock detection system as taught by Carlson by implementing the shock event logger because it would provide the system taught by Carlson with the enhanced capability of being able to provide a correcting operation by a correction-value adjusting unit.

Regarding claim 2, Kikuta teaches a history manager at col 4, lines 54-63. The combination of Carlson and Kikuta would have been obvious for the reason given regarding claim 1.

Regarding claim 3, Kikuta teaches a non-volatile memory at col 5, lines 17-21. The combination of Carlson and Kikuta would have been obvious for the reason given regarding claim 1.

Regarding claims 4-5, the combination of Carlson and Kikuta teach together with the art in the field of disc drives the use of non-volatile memory as a semiconductor and

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non-volatile memory embedded in a disc. The combination would have been obvious for the reason given regarding claim 1.

Regarding claim 6, the combination of Carlson and Kikuta teach a shock sensor processor that analyzes a shock from the shock sensor at col 4, line 6 to col 5, line 16. The combination would have been obvious for the reason given regarding claim 1.

Regarding claims 7-9, Carlson teaches a linear and rotational accelerometer at col 5, lines 33-51.

Regarding claim 10, the combination of Carlson and Kikuta teach together with the art in the field of disc drives the use of a back-emf processor that analyzes a signal when the actuator moves. The combination would have been obvious for the reason given regarding claim 1.

3. Claims 11-17 and 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson in view of Kikuta as to claim 1 and further in view of Allen.

Regarding claims 11-13, the combination of Carlson, Kikuta, and Allen teach use application of PES signals in determining a position deviation indicative of a shock. See col 5, lines 30-35. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to improve upon the shock detection system as taught by Carlson and Kikuta by implementing the use of PES values because it would provide the system taught by Carlson and Kikuta with the enhanced capability of being able to recognize a shock that has caused a significant deviation, i.e., exceeding a threshold position by the transducer. Regarding the approximate distance of 32% of a track width,

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the optimization of a range holds no patentable weight because it is not inventive to discover the optimum or workable ranges by routine experimentation.

Regarding claim 14, the combination of Carlson and Kikuta teach a non-volatile memory at col 5, lines 17-21. The combination would have been obvious for the reason given regarding claim 13.

Regarding claims 15-16, the combination of Carlson and Kikuta teach logging shock events in a sequential manner to the non-volatile memory at col 4, lines 54-63.

Regarding claim 17, the combination of Carlson, Kikuta, Allen, teach together with the art in the field the use of a histogram. The combination would have been obvious for the reason given regarding claim 13.

Regarding claim 27, the combination of Carlson, Kikuta, and Allen teach use application of PES signals in determining a position deviation indicative of a shock. The PES described by Allen at col 5, lines 30-35 can indicate a displacement and a shock sensing circuit evaluates the PES to determine if a shock event has occurred. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to improve upon the shock detection system as taught by Carlson and Kikuta by implementing the use of PES values because it would provide the system taught by Carlson and Kikuta with the enhanced capability of being able to recognize a shock that has caused a significant deviation, i.e., exceeding a threshold position by the transducer.

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Regarding claim 28, Kikuta teaches a non-volatile memory at col 5, lines 17-21.

Regarding claims 29-30, the combination of Carlson, Kikuta, and Allen teach together with the art in the field of disc drives the use of non-volatile memory as a semiconductor and non-volatile memory embedded in a disc. The combination would have been obvious for the reason given regarding claim 27.

Regarding claim 31, the combination of Carlson, Kikuta, and Allen teach logging shock events in a sequential manner to the non-volatile memory at col 4, lines 54-63.

Regarding claim 32, the combination of Carlson, Kikuta, and Allen teach incrementing a register to keep track of shock events detected. Kikuta teaches this feature at col 4, lines 54-63.

Regarding claim 33, the combination of Carlson, Kikuta, Allen, teach together with the art in the field the use of a histogram. The combination would have been obvious for the reason given regarding claim 13.

***Allowable Subject Matter***

4. Claims 18-26 are allowed as the prior art does not teach or suggest the applicant's invention.

Independent claim 18 teaches a hard disk drive. The distinguishing element of the claim is the shock detection system that monitors an elapsed time taken for the position deviated transducer to return to and maintain a position within a reference window for a predetermined time, wherein the position error signal processor determines that a shock event occurred when the elapsed time exceeds a predetermined duration.

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**Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitchell R Slavitt whose telephone number is (703) 305-2809. The examiner can normally be reached on M-F (6:30-4:00), 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran, reached on (703) 305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MS <sup>mh</sup>  
7/28/04

*Primary Examiner*  
*K. Wong*  
*[Signature]*  
*for SPE S. Tran*